

What is claimed is:

1. A stator for a dynamo-electric machine, the stator comprising:

a cylindrical outer core; and

an inner core that includes a plurality of inner core sheets stacked one after the other in an axial direction of the stator, wherein each inner core sheet includes:

a plurality of iron core portions, each of which extends radially inward from the outer core to hold a corresponding coil of the dynamo-electric machine; and

a plurality of bridges, each of which connects between radially inner ends of corresponding two of the plurality of iron core portions, wherein:

each bridge of each inner core sheet includes a thin wall portion, which extends in a circumferential direction of the stator and has a smaller axial thickness in a direction parallel to the axial direction of the stator in comparison to the rest of the inner core sheet; and

a circumferential angular extent of at least one of the thin wall portions of the plurality of bridges differs from that of at least another one of the thin wall portions of the plurality of bridges in each inner core sheet.

2. The stator according to claim 1, wherein all the circumferential angular extents of the thin wall portions of the plurality of the bridges differ from one another in each inner

core sheet.

3. The stator according to claim 1, wherein:

all the circumferential angular extents of the thin wall portions of the plurality of the bridges differ from one another in each inner core sheet; and

the circumferential angular extent of one of every axially adjacent two of the thin wall portions of the inner core sheets differs from the circumferential angular extent of the other one of the every axially adjacent two of the thin wall portions.

4. The stator according to claim 1, wherein:

all the circumferential angular extents of the thin wall portions of the plurality of the bridges differ from one another in each inner core sheet;

a circumferential center of the thin wall portion of each bridge is circumferentially displaced from a circumferential center of the bridge by a corresponding displacement angle in each inner core sheet;

the circumferential angular extent of one of every axially adjacent two of the thin wall portions of the inner core sheets is substantially the same as the circumferential angular extent of the other one of the every axially adjacent two of the thin wall portions; and

the displacement angle of the circumferential center of the one of the every axially adjacent two of the thin wall portions is substantially the same as the displacement angle of the

circumferential center of the other one of the every axially adjacent two of the thin wall portions.

5. The stator according to claim 1, wherein:

all the circumferential angular extents of the thin wall portions of the plurality of the bridges differ from one another in each inner core sheet;

a circumferential center of the thin wall portion of each bridge is circumferentially displaced from a circumferential center of the bridge by a corresponding displacement angle in each inner core sheet;

the circumferential angular extent of one of every axially adjacent two of the thin wall portions of the inner core sheets differs from the circumferential angular extent of the other one of the every axially adjacent two of the thin wall portions; and

the displacement angle of the circumferential center of the one of the every axially adjacent two of the thin wall portions is substantially the same as the displacement angle of the circumferential center of the other one of the every axially adjacent two of the thin wall portions.

6. The stator according to claim 1, wherein all the iron core portions are arranged at irregular intervals in the circumferential direction of the stator in each inner core sheet.

7. The stator according to claim 1, wherein the thin wall portion of each bridge is formed by axially recessing at least

one of two opposed surfaces of the bridge, which are opposed to each other in the direction parallel to the axial direction of the stator.

8. The stator according to claim 1, wherein:

the plurality of inner core sheets includes first to third types of the inner core sheets, which are axially stacked in this order;

the thin wall portion of each bridge of the first type of the inner core sheet is formed by axially recessing one of two opposed surfaces of the bridge, which are opposed to each other in the direction parallel to the axial direction of the stator;

the thin wall portion of each bridge of the second type of the inner core sheet is formed by axially recessing both the two opposed surfaces of the bridge; and

the thin wall portion of each bridge of the third type of the inner core sheet is formed by axially recessing the other one of the two opposed surfaces of the bridge.

9. A stator for a dynamo-electric machine, the stator comprising:

a cylindrical outer core; and

an inner core that includes a plurality of inner core sheets stacked one after the other in an axial direction of the stator, wherein each inner core sheet includes:

a plurality of iron core portions, each of which extends radially inward from the outer core to hold a

corresponding coil of the dynamo-electric machine; and

a plurality of bridges, each of which connects between radially inner ends of corresponding two of the plurality of iron core portions, wherein:

each bridge of each inner core sheet includes a thin wall portion, which extends in a circumferential direction of the stator and has a smaller axial thickness in a direction parallel to the axial direction of the stator in comparison to the rest of the inner core sheet; and

a circumferential center of the thin wall portion of each bridge is circumferentially displaced from a circumferential center of the bridge by a corresponding displacement angle in each inner core sheet.

10. The stator according to claim 9, wherein the displacement angle of the circumferential center of one of every axially adjacent two of the thin wall portions of the inner core sheets differs from the displacement angle of the circumferential center of the other one of the every axially adjacent two of the thin wall portions.

11. The stator according to claim 9, wherein:

all circumferential angular extents of the thin wall portions are generally identical to one another in each corresponding inner core sheet;

all the displacement angles of the circumferential centers of the thin wall portions are generally identical to one another

in each corresponding inner core sheet;

the displacement angle of the circumferential center of one of every axially adjacent two of the thin wall portions of the inner core sheets differs from the displacement angle of the circumferential center of the other one of the every axially adjacent two of the thin wall portions.

12. The stator according to claim 11, wherein identical ones of the thin wall portions, which are generally identical to one another in terms of the displacement angle, are respectively axially placed once every predetermined number of the inner core sheets.

13. The stator according to claim 11, wherein:

the plurality of inner core sheets includes a plurality of first type inner core sheets and a plurality of second type inner core sheets;

each first type inner core sheet differs from each second type inner core sheet with respect to at least one of the displacement angles of the thin wall portions; and

the plurality of first type inner core sheets and the plurality of second type inner core sheets are axially alternately stacked.

14. The stator according to claim 9, wherein:

all circumferential angular extents of the thin wall portions are generally identical to one another in each

corresponding inner core sheet;

every circumferentially adjacent two of the thin wall portions are displaced in opposite directions, respectively, in each inner core sheet, so that the circumferential center of one of the every circumferentially adjacent two of the thin wall portions is circumferentially displaced from the circumferential center of the associate bridge by a predetermined negative angle, and the circumferential center of the other one of the every circumferentially adjacent two of the thin wall portions is circumferentially displaced from the circumferential center of the associated bridge by a predetermined positive angle, wherein an absolute value of the predetermined negative angle is generally the same as an absolute value of the predetermined positive angle; and

the displacement angle of the circumferential center of one of every axially adjacent two of the thin wall portions of the inner core sheets differs from the displacement angle of the circumferential center of the other one of the every axially adjacent two of the thin wall portions.

15. The stator according to claim 14, wherein:

the plurality of inner core sheets includes a plurality of types of inner core sheets, which differ from one another with respect to at least one the displacement angles of the thin wall portions; and

each of the plurality of types of inner core sheets is axially placed once every predetermined number of the inner core

sheets, so that identical ones of the thin wall portions, which are identical to one another in terms of the displacement angle, are respectively axially placed once every predetermined number of the inner core sheets.

16. The stator according to claim 9, wherein:

all the circumferential angular extents of the thin wall portions of the plurality of the bridges differ from one another in each inner core sheet;

all the displacement angles of the circumferential centers of the thin wall portions are generally identical to one another in each corresponding inner core sheet; and

the displacement angle of the circumferential center of one of every axially adjacent two of the thin wall portions of the inner core sheets differs from the displacement angle of the circumferential center of the other one of the every axially adjacent two of the thin wall portions.

17. The stator according to claim 16, wherein identical ones of the thin wall portions, which are generally identical to one another in terms of the displacement angle, are respectively axially placed once every predetermined number of the inner core sheets.

18. The stator according to claim 16, wherein the circumferential angular extent of the one of the every axially adjacent two of the thin wall portions of the inner core sheets



is substantially the same as the circumferential angular extent of the other one of the every axially adjacent two of the thin wall portions.

19. The stator according to claim 16, wherein the circumferential angular extent of the one of the every axially adjacent two of the thin wall portions of the inner core sheets differs from the circumferential angular extent of the other one of the every axially adjacent two of the thin wall portions.

20. The stator according to claim 9, wherein:

all circumferential angular extents of the thin wall portions are generally identical to one another in each corresponding inner core sheet;

all the displacement angles of the circumferential centers of the thin wall portions are generally identical to one another in each corresponding inner core sheet;

the circumferential angular extent of one of every axially adjacent two of the thin wall portions of the inner core sheets differs from the circumferential angular extent of the other one of the every axially adjacent two of the thin wall portions; and

the displacement angle of the circumferential center of the one of the every axially adjacent two of the thin wall portions differs from the displacement angle of the circumferential center of the other one of the every axially adjacent two of the thin wall portions.

21. The stator according to claim 9, wherein a circumferential angular extent of at least one of the thin wall portions of the plurality of bridges differs from that of at least another one of the thin wall portions of the plurality of bridges in each inner core sheet.

22. A stator for a dynamo-electric machine, the stator comprising:

a cylindrical outer core; and

an inner core that includes a plurality of inner core sheets stacked one after the other in an axial direction of the stator, wherein each inner core sheet includes:

a plurality of iron core portions, each of which extends radially inward from the outer core to hold a corresponding coil of the dynamo-electric machine; and

a plurality of bridges, each of which connects between radially inner ends of corresponding two of the plurality of iron core portions, wherein:

each bridge of each inner core sheet includes a thin wall portion, which extends in a circumferential direction of the stator and has a smaller axial thickness in a direction parallel to the axial direction of the stator in comparison to the rest of the inner core sheet;

all circumferential angular extents of the thin wall portions of the plurality of bridges are generally identical to one another in each corresponding inner core sheet; and

the circumferential angular extent of one of every axially

adjacent two of the thin wall portions of the inner core sheets differs from the circumferential angular extent of the other one of the every axially adjacent two of the thin wall portions.

23. The stator according to claim 22, wherein:

a circumferential center of the thin wall portion of each bridge is circumferentially displaced from a circumferential center of the bridge by a corresponding displacement angle in each inner core sheet; and

the displacement angle of the circumferential center of the one of the every axially adjacent two of the thin wall portions is substantially the same as the displacement angle of the circumferential center of the other one of the every axially adjacent two of the thin wall portions.